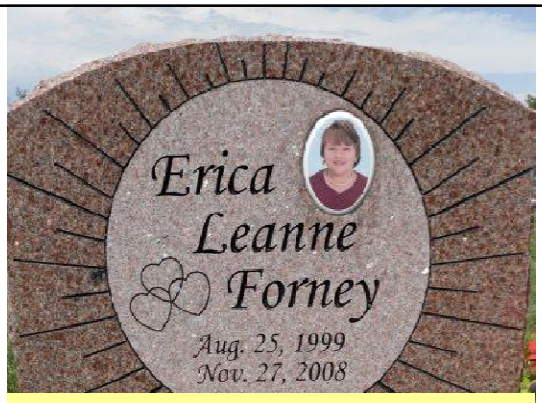
Driven To Distraction, an Advocate's Journey:

What Really Scares Us

CAR FOCUSDRIVEN



Distracted Driving Awareness Month

Overview

- Background and History
- Scope of the Problem
- Understanding Crash Causation
- How we Quantify Distracted Driving (DD)
- How do we Motivate People to Change
  - How we can all get there together ..

Background and History

About "Distracted Driving" (DD)

- DD is not new

Working definition: Anything that diminishes your senses, judgment, or physical ability to pilot your vehicle safely. They include things like:

- Reading maps, news paper, books
- Eating, drinking, grooming
- Passengers, tending children
- Reaching for items in the cab
- Searching for a CD, MP3, radio station, loud music
- Looking at objects outside the vehicle
- Day dreaming/obsessive behavior
- Using a cell phone/smart phone/electronic interface

Background and History

About "Distracted Driving"

- What's changed? Why do we care now?
  - First cars were very simple
  - Manual transmissions (stick)
  - Top speeds/engine power greatly increased
  - 4 speed and 5 speed transmissions
  - Power steering, power brakes (more control, faster braking)
  - More cars on the road every year
  - Technology intrudes: AM/FM, 8 Track, cassette tapes, CDs, MP3, DVD video, web surfing, Facebook, Twitter, GPS, cell phones-etc

Background and History

- As a nation we've been driving vehicles regularly and using telephones for about 100 years
- It wasn't until the first portable phones were offered (called a 'car phone') that we combined the 2
- Modern cellular phones (GSM) have only been offered since the 1990's.



The Present

Cell phones are everywhere

- There are around 4 billion cell phones worldwide (that's enough for 6 out of every 10 man/woman/child)
- There are now more cell phone accounts in the U.S. than there are people (all 50 states and all territories)
- Cell phone "etiquette" has breached every aspect of life (movie theatres, hospitals, houses of worship, schools, etc)
- Most drivers see the cell phone as a safety device for themselves; but as a safety hazard in the hands of others.

Scope of the Problem

- 1 million lives lost to crashes in the last 25 years
- An average of 35,000 deaths each year; 100 lives per day.
- More than 5500 deaths and 500,000 injuries linked to distracted driving in 2009
- Crashes are the number one cause of death for people 35 and under (on and off the job).
- It's the number one killer of 15-20yr olds, more than the next 3 categories combined (homicide, suicide and disease).

The Present

- 38.8% of California drivers said drivers using a cell phone are "the most dangerous threat on the road" (Dec 2011)
- Up 20 percentage points from previous year
- The California Highway Patrol has issued 475,000 tickets for violations to their hands-free law since it went into effect in 2008
- *"Oftentimes we see drivers weaving in and out of lanes or driving on the shoulders. We stop to investigate what we may think is a possible DUI driver only to find out it was someone talking on the phone, hands-free or not."*

Officer D.J. Sarabia, of San Jose PD

The Present

- 88% of people said text messaging while driving is a "very serious" safety threat and the biggest safety concern:
- Impaired driving 83%. Talking on cellphones at 65%.

Canadian Automobile Association (CAA) 2009

- 86% do not approve of using a cell phone when driving
- 97% say it's "wrong" to e-mail and text while driving.

"*Mobile technologies have dramatically increased our ability to multi-task at home and work and now unfortunately in our cars. And it's happening despite clear evidence that most motor vehicle accidents are caused by driver error. Anything that takes away from one's focus on safe driving should be avoided.*" Francois Boulanger, president and CEO, RBC General Insurance Company

Understanding Crash Causation

What causes crashes?

Vehicle Maintenance Factors
- Definite cause 10% of the time; probable 13%

Environmental Factors
- Definite cause 20% of the time; probable 33%

Human Error
- Definite cause 70% of the time; probable 93%

Source: The Auto Alliance

Understanding Crash Causation

Driving Distractions, the human factor

Visual
- Taking your eyes off the road (texting, looking in the back seat

Manual
- Holding something, hands off the wheel

Cognitive
- Your brain's distraction, which limits your visual and spatial perception.

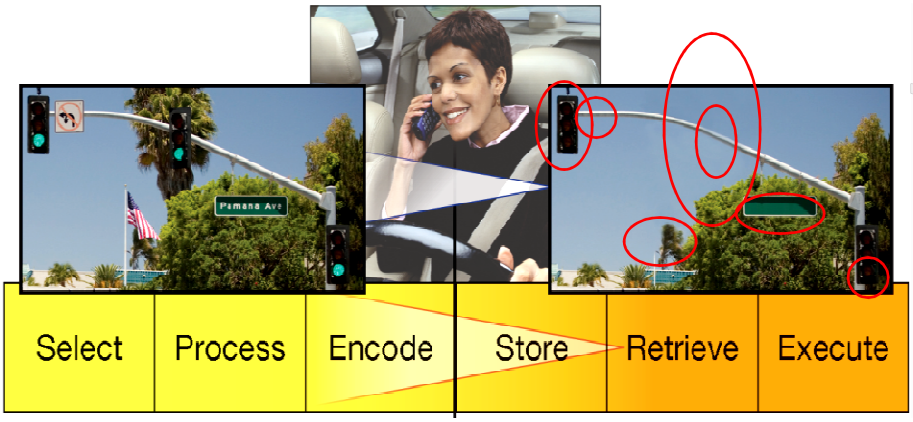
Cognitive Distractions

Truths

- Multitasking is a myth. Your brain does tasks exclusively, toggling between demanding tasks.
- Doing 2 things that require thought, choices and selection requires your brain to switch between tasks.
- This causes a reduction in effectiveness for both tasks and an increases the likelihood of errors.
- It also creates reaction switching deficits (momentary lapses before your brain re-engages with the other task)

Cognitive Distractions

Truths



6 steps in cognitive tasks source: NSC

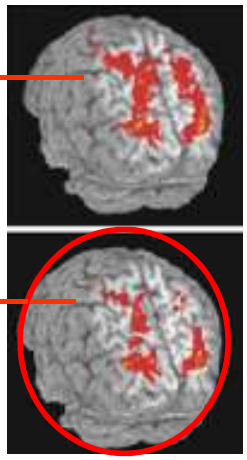
Measuring Cognitive Distractions

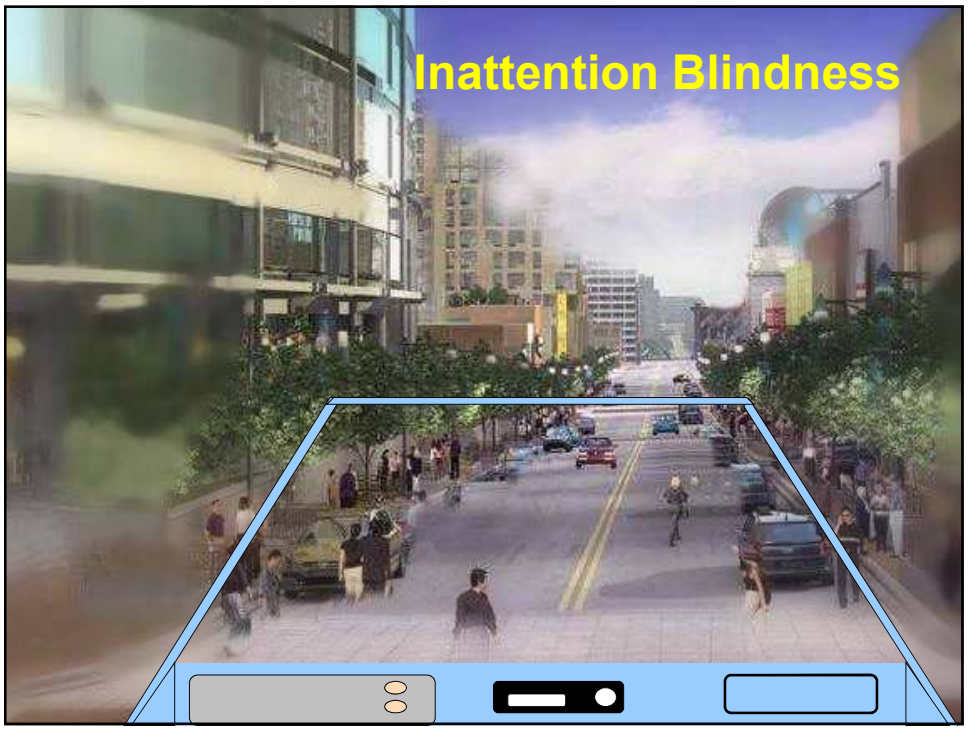
Carnegie- Mellon University Study

- Subjects interacted with a driving simulator while having an fMRI brain scan.

- After establishing the active region used in driving (motor responses, visual, audio, spatial, etc) the subjects then engaged in a remote conversation with another party.

- The brain scans quickly changed showing up to a 40% decrease in activity in those regions (more activity is shifted to memory and imagination regions)





Studying DD

Studies

Naturalistic Measures the "real world" with cameras, monitoring devices, etc to 'catch' events and analyze driver data.

- Very costly, limited in scope
- Can show a lot of visual evidence + physical data
- Test subjects know they are being observed
- Capturing relevant events is difficult
- Do not measure brain distractions well (cognitive)

Example: NHTSA 100 car study

Studying DD

Studies

Epidemiological Investigating crashes after they have taken place

- Very costly
- Require a lot of manpower
- Take a long to complete
- Difficult to reproduce due to privacy issues/cell records

Example: Perth Australia study, 2005

Studying DD

Studies

Clinical/Lab Observing behaviors and results in a controlled environment

- Can be very expensive to conduct
- Can require expensive machines
- Sample sizes can be larger, but typically are not
- Can control for specific behaviors
- Have the ability to measure the effects of Cell Phone conversation on the brain very accurately

Example: University of Utah, Applied Cognition Lab

Results

Studies - Summarizing Risk Factors

Naturalistic	Epidemiological	Clinical
Show risks of hands free phone conversations are 1-2 times above driving alone; handheld manipulation slightly higher	Show that risk of talking on a phone is 4 times above driving alone; (hands-free = handheld)	A majority support increased crash risk from phone conversations at 4 times above driving alone (hands-free=handheld)

Studying DD

Studies – How are they used?

Behavior	Assessed Risk: DOT (100 car study)	Assessed Risk: Safety Council
Reading	3.38	3.4
Reaching (moving object)	8.82	8.8
Talking on a cell phone	1.29	4

Sources: NHTSA: Driver Distraction Program
NSC: "Cell Phone Use & Driving"

Studying DD

Studies – How are they used?

Naturalistic	Epidemiological + Clinical
- Auto Industry - Hands-free retail industry - Advocates - Media - Insurance (texting) - Lawmakers, DOT, NHTSA, NTSB	- Advocates - Media - Many Insurance companies - Lawmakers, DOT, NHTSA, NTSB

Studies- How Are They Used?

Naturalistic Studies

- Some of these studies favor hands free as relatively safe (the only ones that do) 1.3x above normal.
- When you hear "Texting increases crash risk 23 times", that's quoting a Naturalistic study
- The Auto industry uses these results to pave the way for "Infotainment" systems like Ford "Sync", that create more driver distractions (even though few have been performed and they do not line up with other studies' results).
- After years of rhetoric to the contrary, The DOT and NHTSA seem to be using the results of Naturalistic studies almost exclusively now, making recommendations for infotainment systems that the industry can self regulate with.

Studies- How Are They Used?

Clinical and Epidemiological Studies

- Safety groups like FocusDriven, the NSC and many others, speak to the fact that the majority of these studies put the increased risk of talking while driving (hands free or handheld) at 4x increased risk.
- The NTSB, when making their recommendation to ban ALL cell use for ALL drivers in Dec of 2011.
- Most of the credible internet resources use the results of these studies a valid and highly accurate when choosing web content and creating other educational content for the public (distraction.gov is ignores this research in their content).

Studies- How Are They Used?

Summary

- The auto industry and hands-free retail industry are excited about putting more hands-free/voice activated applications built into vehicles.
- This will skirt many state DD laws that ban handheld usage (there is only one complete ban in existence) & increase usage amongst younger drivers (the most vulnerable age group for distractions) , and,
- It will present distractions that most experienced drivers would not attempt while driving- *if* the auto manufacturer didn't install in into the vehicle (like social networking, movie reservations, restaurant locators, etc).
- It creates the *illusion* of simplicity and safety when in fact they are increasing driver distraction and the complexity of simply driving from point A to point B (ie: these have nothing to do with the safe operation of the car)

Quantifying DD

Quantifying DD

- **Data Collection**
  - Collection practices are standard (ie FARS), but field collection is not.
  - Standardization needs to be complete so that every crash investigation is looking or signs of cell phone usage as factor in the crash (like we do with alcohol involvement and seatbelt use).
  - We need to be able to pull cell records of drivers as easily as we draw blood from them.

Motivating People to Change

Quantifying DD

Sustained Impairment — Temporary Impairment

.08 BAC

Both increase crash risk by 4 times

Phone Conversation

* Our national tolerance for driver impairment is “4 times”

Motivating People to Change

- We need to agree on what the problem is
- How to measure it
- Address DD like we have other issues in the past
  - Education (includes victim impact panels for hardcore, repeat offenders)
  - Legislation (Primary enforcement laws, preferably banning all cell use by the driver)
  - Enforcement (high visibility, primary enforcement no matter which state line you cross)

Motivating People to Change

High Visibility Enforcement

-NHTSA Pilot Program:

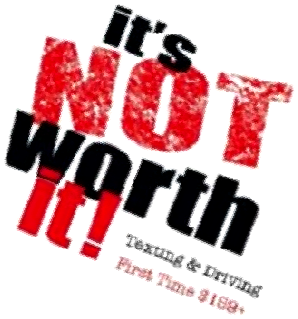
1 Year program in: Hartford, CT & Syracuse, NY

Started in April, 2010, DD went down:

	Texting	Handheld Phone
Syracuse	-32% (*)	-32%
Hartford	-72%	-57%

Motivating People to Change

California



- Handheld ban enacted in 2008
- First time offense: $189, primary
- 2yrs after:
  - Overall traffic deaths down 22%
  - Handheld phone driver deaths down 47%
  - **Similar results for hands-free related deaths!**

Motivating People to Change

Chapel Hill, NC

The First total ban on all cell phone use

- Bans all wireless devices, including cell phones, or "additional technology" that can access "digital media", which it defines as a camera, music, the Internet, or games.
- Goes into effect in the summer of 2012
- Campaign was started by a student who was hit by a cell phone-distracted driver… *Advocacy*!

Motivating People to Change

We Can All Get There, Together!

- We need to collect data consistently to understand the issue with greater clarity
- We need use language that we are familiar with:

  "Impairment *is* impairment" (temp. or sustained)
- Create uniform laws and enforcement techniques
- Make DD as socially unacceptable as smoking, drinking and driving and non-seatbelt use has become

Be An Advocate!

In May of 2007 Cady was killed when a severely distracted driver ran a red light.

Remember: Cady Reynolds (C.A.R.)

Thank You!

C.A.R. Alliance for Safer Teen Driving

FOCUSDRIVEN ADVOCATES FOR CELL-FREE DRIVING

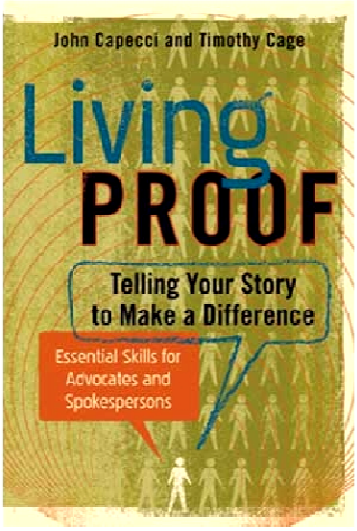
SaferTeenDriving.org

FocusDriven.org

FocusDriven

Living Proof

- Proceeds in April go to FocusDriven!



SaferTeenDriving.org